CLAIMS

What is claimed is:

1. A method for predicting mobility of a mobile node relative to one or more fixed nodes in a wireless, mobile access, digital network, comprising:

obtaining a plurality of samples of a first physical parameter the value of which is related to the mobility of said mobile node; and

statistically processing said plurality of samples and generating a predicted future value of said parameter.

2. The method of claim 1 wherein said first physical parameter is packet latency.

3. The method of claim 1 wherein the step of obtaining a plurality of samples comprises deterministically obtaining said samples from samples of a second related physical parameter.

4. The method of claim 3 wherein said first physical parameter is packet latency and wherein said second physical parameter is transmitter to receiver distance.

5. The method of claim 1 wherein the step of obtaining a plurality of samples comprises measuring said samples.

6. The method of claim 6 wherein said first physical parameter is packet latency.

7. The method of claim 6 wherein said packet latency is measured by:

time stamping a packet;

transmitting the packet from said mobile node to a said fixed node;

retransmitting said packet from said fixed node to said mobile node;

noting the time of arrival of said packet at said mobile node;

calculating one way latency of the packet from said fixed node to said mobile node from the value of said time stamp and the value of said arrival time.

8. The method of claim 1 wherein the step of statistically processing comprises application of a least mean squares algorithm.

9. The method of claim 8 wherein the step of statistically processing comprises application of an algorithm to minimize mean square error.

10. The method of claim 1 wherein said first physical parameter is a stochastic process.

11. The method of claim 10 wherein the step of statistically processing comprises a stochastic prediction process.

12. The method of claim 11 wherein said stochastic prediction process comprises:

inputting said sample values of said first physical parameter to a correlation computer and generating an estimation coefficient;

inputting said estimation coefficient and said sample values to a linear combiner and generating a minimized mean square error predicted value of said first physical parameter at a future time.

13. The method of claim 1 wherein the step of statistically processing comprises an adaptive prediction process.

14. The method of claim 13 wherein said adaptive prediction process comprises:

inputting said sample values of said first physical parameter to an adaptive predictor and generating a predicted value of said first physical parameter at a selected time in the future;

obtaining the actual value of said first physical parameter at said selected time;

comparing said predicted value and said actual value and generating an error value;

feeding back said error value to said adaptive predictor and adjusting the predicted value of said first physical parameter at a next selected time in the future.

15. The method of claim 14 wherein said sample values are iteratively input to said adaptive predictor and wherein said adaptive predictor iteratively predicts values of said first physical parameter at successive selected times in the future.

16. The method of claim 13 wherein said adaptive predictor comprises a least mean square algorithm and an algorithm for minimizing mean square error.

17. The method of claim 1, including:

comparing said predicted future value with a predetermined threshold value; and

initiating a desired action when said predicted future value meets or exceeds said threshold value.

18. The method of claim 1 wherein said first physical parameter is selected from the group comprising: signal to interference ratio, signal to noise ration, pilot signal strength.

19. The method of claim 1 wherein:

said first physical parameter is packet latency;

a future value of packet latency is predicted with respect to each of a plurality of fixed nodes in the network; and

a network connection is established between said mobile node and said fixed node exhibiting the lowest predicted value of packet latency.